



Joseph E. Kernan
Governor

Lori F. Kaplan
Commissioner

March 12, 2004

100 North Senate Avenue
P.O. Box 6015
Indianapolis, Indiana 46206-6015
(317) 232-8603
(800) 451-6027
www.in.gov/idem

TO: Interested Parties / Applicant

RE: USS - American Excavating / 089-18512-05250

FROM: Paul Dubenetzky
Chief, Permits Branch
Office of Air Quality

Notice of Decision: Approval – Effective Immediately

Please be advised that on behalf of the Commissioner of the Department of Environmental Management, I have issued a decision regarding the enclosed matter. Pursuant to IC 13-17-3-4 and 326 IAC 2, this permit modification is effective immediately, unless a petition for stay of effectiveness is filed and granted, and may be revoked or modified in accordance with the provisions of IC 13-15-7-1.

If you wish to challenge this decision, IC 4-21.5-3-7 and IC 13-15-7-3 require that you file a petition for administrative review. This petition may include a request for stay of effectiveness and must be submitted to the Office Environmental Adjudication, 100 North Senate Avenue, Government Center North, Room 1049, Indianapolis, IN 46204, **within eighteen (18) days of the mailing of this notice**. The filing of a petition for administrative review is complete on the earliest of the following dates that apply to the filing:

- (1) the date the document is delivered to the Office of Environmental Adjudication (OEA);
- (2) the date of the postmark on the envelope containing the document, if the document is mailed to OEA by U.S. mail; or
- (3) The date on which the document is deposited with a private carrier, as shown by receipt issued by the carrier, if the document is sent to the OEA by private carrier.

The petition must include facts demonstrating that you are either the applicant, a person aggrieved or adversely affected by the decision or otherwise entitled to review by law. Please identify the permit, decision, or other order for which you seek review by permit number, name of the applicant, location, date of this notice and all of the following:

- (1) the name and address of the person making the request;
- (2) the interest of the person making the request;
- (3) identification of any persons represented by the person making the request;
- (4) the reasons, with particularity, for the request;
- (5) the issues, with particularity, proposed for considerations at any hearing; and
- (6) identification of the terms and conditions which, in the judgment of the person making the request, would be appropriate in the case in question to satisfy the requirements of the law governing documents of the type issued by the Commissioner.

Pursuant to 326 IAC 2-7-18(d), any person may petition the U.S. EPA to object to the issuance of a Title V operating permit or modification within sixty (60) days of the end of the forty-five (45) day EPA review period. Such an objection must be based only on issues that were raised with reasonable specificity during the public comment period, unless the petitioner demonstrates that it was impracticable to raise such issues, or if the grounds for such objection arose after the comment period.

To petition the U.S. EPA to object to the issuance of a Title V operating permit, contact:

U.S. Environmental Protection Agency
401 M Street
Washington, D.C. 20406

If you have technical questions regarding the enclosed documents, please contact the Office of Air Quality, Permits Branch at (317) 233-0178. Callers from within Indiana may call toll-free at 1-800-451-6027, ext. 3-0178.



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We make Indiana a cleaner, healthier place to live.

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March 12, 2004

Mr. Robert Holland
American Excavating, Inc.
P.O. Box 374
Enon, Ohio 45323

Re: Minor Source Modification No:
089-18512-05250

Dear Mr. Holland:

U.S. Steel Gary Works. applied for a Part 70 Operating Permit on December 13, 1996 for a steel mill. An application to modify the source was received from American Excavating, Inc. on February 9, 2004. Pursuant to 326 IAC 2-7-10.5 the following emission units are approved for construction at the source:

- (a) One (1) primary crusher, capacity: 125 tons of stone or metal slag per hour.
- (b) One (1) screening operation, capacity: 125 tons of stone or metal slag per hour.
- (c) One (1) aggregate handling, loading and unloading operation, capacity: 125 tons of stone or metal slag per hour.
- (d) One (1) storage area, capacity: 3,000 tons of stone or metal slag.

The Minor Source Modification approval will be incorporated into the pending Part 70 permit application pursuant to 326 IAC 2-7-10.5(l)(3). The source may begin operation upon issuance of the source modification approval.

This decision is subject to the Indiana Administrative Orders and Procedures Act - IC 4-21.5-3-5. If you have any questions on this matter call (800) 451-6027, press 0 and ask for Craig J. Friederich, c/o OAQ, 100 North Senate Avenue, P.O. Box 6015, Indianapolis, Indiana, 46206-6015, at 631-691-3395, ext. 19 or in Indiana at 1-800-451-6027 (ext 631-691-3395).

Sincerely,

Original Signed by Paul Dubenetzky

Paul Dubenetzky, Chief
Permits Branch
Office of Air Quality

Attachments

CJF/MES

cc: File - Lake County
U.S. EPA, Region V
Lake County Health Department
Northwest Regional Office
Air Compliance Section Inspector - Rick Massoels
Compliance Branch

American Excavating, Inc.
Gary, Indiana

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Administrative and Development
Technical Support and Modeling - Michele Boner



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PART 70 MINOR SOURCE MODIFICATION OFFICE OF AIR QUALITY

**American Excavating, Inc.
1 North Broadway
Gary, Indiana 46402**

(herein known as the Permittee) is hereby authorized to construct and operate subject to the conditions contained herein, the emission units described in Section A (Source Summary) of this approval.

This approval is issued in accordance with 326 IAC 2 and 40 CFR Part 70 Appendix A and contains the conditions and provisions specified in 326 IAC 2-7 as required by 42 U.S.C. 7401, et. seq. (Clean Air Act as amended by the 1990 Clean Air Act Amendments), 40 CFR Part 70.6, IC 13-15 and IC 13-17.

Source Modification No.: 089-18512-05250

Issued by: Original Signed by Paul Dubenetzky
Paul Dubenetzky, Branch Chief
Office of Air Quality

Issuance Date: March 12, 2004

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SECTION A

SOURCE SUMMARY

This approval is based on information requested by the Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ). The information describing the emission units contained in Conditions A.1 through A.3 is descriptive information and does not constitute enforceable conditions. However, the Permittee should be aware that a physical change or a change in the method of operation that may render this descriptive information obsolete or inaccurate may trigger requirements for the Permittee to obtain additional permits or seek modification of this approval pursuant to 326 IAC 2, or change other applicable requirements presented in the permit application.

A.1 General Information [326 IAC 2-7-4(c)] [326 IAC 2-7-5(15)]

The Permittee owns and operates portable stone and metal slag processing plant.

Responsible Official:	Robert Holland
Source Address:	1 North Broadway, Gary, IN 46402
Mailing Address:	P.O. Box 374, Enon, Ohio 45323
General Source Phone Number:	937-882-1374
SIC Code:	1429
County Location:	Gary
Source Location Status:	Nonattainment for ozone, PM ₁₀ and SO ₂ . Attainment for all other criteria pollutants
Source Status:	Part 70 Permit Program Major Source, under Emission Offset Rules; Major Source, Section 112 of the Clean Air Act 1 of 28 Source Categories

A.2 Emission Units and Pollution Control Equipment Summary [326 IAC 2-7-4(c)(3)] [326 IAC 2-7-5(15)]

This portable source is approved to construct and operate the following emission units and pollution control devices:

- (a) One (1) primary crusher, capacity: 125 tons of stone or metal slag per hour.
- (b) One (1) screening operation, capacity: 125 tons of stone or metal slag per hour.
- (c) One (1) aggregate handling, loading and unloading operation, capacity: 125 tons of stone or metal slag per hour.
- (d) One (1) storage area, capacity: 3,000 tons of stone or metal slag.

A.3 Specifically Regulated Insignificant Activities [326 IAC 2-7-1(21)] [326 IAC 2-7-4(c)] [326 IAC 2-7-5(15)]

This portable source does not currently have any insignificant activities, as defined in 326 IAC 2-7-1(21).

A.4 Part 70 Permit Applicability [326 IAC 2-7-2]

This portable source is required to have a Part 70 permit by 326 IAC 2-7-2 (Applicability) because:

- (a) It is a major source, as defined in 326 IAC 2-7-1(22);
- (b) It is a source in a source category designated by the United States Environmental Protection Agency (U.S. EPA) under 40 CFR 70.3 (Part 70 - Applicability).

SECTION B GENERAL CONSTRUCTION CONDITIONS

B.1 Definitions [326 IAC 2-7-1]

Terms in this permit shall have the definition assigned to such terms in the referenced regulation. In the absence of definitions in the referenced regulation, any applicable definitions found in the statutes or regulations (IC 13-11, 326 IAC 1-2 and 326 IAC 2-7) shall prevail.

B.2 Effective Date of the Permit [IC13-15-5-3]

Pursuant to IC 13-15-5-3, this approval becomes effective upon its issuance.

B.3 Revocation of Permits [326 IAC 2-1.1-9(5)] [326 IAC 2-7-10.5(i)]

Pursuant to 326 IAC 2-1.1-9(5)(Revocation of Permits), the Commissioner may revoke this approval if construction is not commenced within eighteen (18) months after receipt of this approval or if construction is suspended for a continuous period of one (1) year or more.

B.4 Part 70 Operating Permit [326 IAC 2-7-4(a)(1)(A)(ii)]

Pursuant to 326 IAC 2-7-4(a)(1)(A)(ii) and 326 IAC 2-5.1-4, the Permittee shall apply for a Title V operating permit within twelve (12) months of the date on which the source first meets an applicability criterion of 326 IAC 2-7-2.

SECTION C **GENERAL OPERATION CONDITIONS**

C.1 Certification [326 IAC 2-7-4(f)] [326 IAC 2-7-6(1)] [326 IAC 2-7-5(3)(C)]

- (a) Where specifically designated by this permit or required by an applicable requirement, any application form, report, or compliance certification submitted shall contain certification by a responsible official of truth, accuracy, and completeness. This certification shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.
- (b) One (1) certification shall be included, using the attached Certification Form, with each submittal requiring certification.
- (c) A responsible official is defined at 326 IAC 2-7-1(34).

C.2 Preventive Maintenance Plan [326 IAC 2-7-5(1),(3) and (13)] [326 IAC 2-7-6(1) and (6)] [326 IAC 1-6-3]

- (a) If required by specific condition(s) in Section D of this permit, the Permittee shall prepare and maintain Preventive Maintenance Plans (PMPs) when operation begins, including the following information on each facility:
 - (1) Identification of the individual(s) responsible for inspecting, maintaining, and repairing emission control devices;
 - (2) A description of the items or conditions that will be inspected and the inspection schedule for said items or conditions; and
 - (3) Identification and quantification of the replacement parts that will be maintained in inventory for quick replacement.

If due to circumstances beyond the Permittee's control, the PMPs cannot be prepared and maintained within the above time frame, the Permittee may extend the date an additional ninety (90) days provided the Permittee notifies:

Indiana Department of Environmental Management
Compliance Branch, Office of Air Quality
100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015

The PMP and the PMP extension notification do not require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

- (b) The Permittee shall implement the PMPs as necessary to ensure that failure to implement a PMP does not cause or contribute to a violation of any limitation on emissions or potential to emit.
- (c) A copy of the PMPs shall be submitted to IDEM, OAQ upon request and within a reasonable time, and shall be subject to review and approval by IDEM, OAQ. IDEM, OAQ may require the Permittee to revise its PMPs whenever lack of proper maintenance causes or contributes to any violation. The PMP does not require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

- (d) Records of preventive maintenance shall be retained for a period of at least five (5) years. These records shall be kept at the source location for a minimum of three (3) years. The records may be stored elsewhere for the remaining two (2) years as long as they are available upon request. If the Commissioner makes a request for records to the Permittee, the Permittee shall furnish the records to the Commissioner within a reasonable time.

C.3 Permit Amendment or Modification [326 IAC 2-7-11] [326 IAC 2-7-12]

- (a) Permit amendments and modifications are governed by the requirements of 326 IAC 2-7-11 or 326 IAC 2-7-12 whenever the Permittee seeks to amend or modify this permit.
- (b) Any application requesting an amendment or modification of this permit shall be submitted to:

Indiana Department of Environmental Management
Permits Branch, Office of Air Quality
100 North Senate Avenue, P.O. Box 6015
Indianapolis, Indiana 46206-6015

Any such application should be certified by the "responsible official" as defined by 326 IAC 2-7-1(34).
- (c) The Permittee may implement administrative amendment changes addressed in the request for an administrative amendment immediately upon submittal of the request. [326 IAC 2-7-11(c)(3)]

C.4 Opacity [326 IAC 5-1]

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary alternative opacity limitations), opacity shall meet the following, unless otherwise stated in this permit:

- (a) Opacity shall not exceed an average of twenty percent (20%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
- (b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

C.5 Fugitive Dust Emissions [326 IAC 6-4]

The Permittee shall not allow fugitive dust to escape beyond the property line or boundaries of the property, right-of-way, or easement on which the source is located, in a manner that would violate 326 IAC 6-4 (Fugitive Dust Emissions).

C.6 Fugitive Dust Emissions [326 IAC 6-1-11.1]

Pursuant to 326 IAC 6-1-11.1 (Lake County Fugitive Particulate Matter Control Requirements), the particulate matter emissions from source wide activities shall meet the following requirements:

- (a) The average instantaneous opacity of fugitive particulate emissions from a paved road shall not exceed ten percent (10%).
- (b) The average instantaneous opacity of fugitive particulate emissions from an unpaved road shall not exceed ten percent (10%).

- (c) The average instantaneous opacity of fugitive particulate emissions from batch transfer shall not exceed ten percent (10%).
- (d) The opacity of fugitive particulate emissions from continuous transfer of material onto and out of storage piles shall not exceed ten percent (10%) on a three (3) minute average.
- (e) The opacity of fugitive particulate emissions from storage piles shall not exceed ten percent (10%) on a six (6) minute average.
- (f) There shall be a zero (0) percent frequency of visible emission observations of a material during the inplant transportation of material by truck or rail at any time.
- (g) The opacity of fugitive particulate emissions from the inplant transportation of material by front end loaders and skip hoists shall not exceed ten percent (10%).
- (h) There shall be a zero (0) percent frequency of visible emission observations from a building enclosing all or part of the material processing equipment, except from a vent in the building.
- (i) The PM₁₀ emissions from building vents shall not exceed twenty-two thousandths (0.022) grains per dry standard cubic foot and ten percent (10%) opacity.
- (j) The opacity of particulate emissions from dust handling equipment shall not exceed ten percent (10%).
- (k) Any facility or operation not specified in 326 IAC 6-1-11.1(d) shall meet a twenty percent (20%), three (3) minute average opacity standard.

The Permittee shall achieve these limits by controlling fugitive particulate matter emissions according to the Fugitive Dust Control Plan, submitted on February 9, 2004.

C.7 Fugitive Particulate Matter Emission Limitations [326 IAC 6-5]

Pursuant to 326 IAC 6-5 (Fugitive Particulate Matter Emission Limitations), fugitive particulate matter emissions shall be controlled according to the plan submitted on February 9, 2004.

C.8 Operation of Equipment [326 IAC 2-7-6(6)]

Except as otherwise provided by statute or rule, or in this permit, all air pollution control equipment listed in this permit and used to comply with an applicable requirement shall be operated at all times that the emission units vented to the control equipment are in operation.

Compliance Requirements [326 IAC 2-1.1-11]

C.9 Compliance Requirements [326 IAC 2-1.1-11]

The commissioner may require stack testing, monitoring, or reporting at any time to assure compliance with all applicable requirements. Any monitoring or testing shall be performed in accordance with 326 IAC 3 or other methods approved by the commissioner or the U. S. EPA.

Compliance Monitoring Requirements [326 IAC 2-7-5(1)] [326 IAC 2-7-6(1)]

C.10 Compliance Monitoring [326 IAC 2-7-5(3)] [326 IAC 2-7-6(1)]

If required by Section D, all monitoring and record Keeping requirements shall be implemented when operation begins. The Permittee shall be responsible for installing any necessary equipment and

initiating any required monitoring related to that equipment.

C.11 Monitoring Methods [326 IAC 3] [40 CFR 60] [40 CFR 63]

Any monitoring or testing required by Section D of this permit shall be performed according to the provisions of 326 IAC 3, 40 CFR 60, Appendix A, 40 CFR 60 Appendix B, 40 CFR 63, or other approved methods as specified in this permit.

Corrective Actions and Response Steps [326 IAC 2-7-5] [326 IAC 2-7-6]

C.12 Compliance Response Plan - Preparation, Implementation, Records, and Reports [326 IAC 2-7-5] [326 IAC 2-7-6]

- (a) The Permittee is required to prepare a Compliance Response Plan (CRP) for each compliance monitoring condition of this permit. A CRP shall be submitted to IDEM, OAQ upon request. The CRP shall be prepared within ninety (90) days after issuance of this permit by the Permittee, supplemented from time to time by the Permittee, maintained on site, and comprised of:
- (1) Reasonable response steps that may be implemented in the event that a response step is needed pursuant to the requirements of Section D of this permit; and an expected timeframe for taking reasonable response steps.
 - (2) If, at any time, the Permittee takes reasonable response steps that are not set forth in the Permittee's current Compliance Response Plan and the Permittee documents such response in accordance with subsection (e) below, the Permittee shall amend its Compliance Response Plan to include such response steps taken.
- (b) For each compliance monitoring condition of this permit, reasonable response steps shall be taken when indicated by the provisions of that compliance monitoring condition as follows:
- (1) Reasonable response steps shall be taken as set forth in the Permittee's current Compliance Response Plan; or
 - (2) If none of the reasonable response steps listed in the Compliance Response Plan is applicable or responsive to the excursion, the Permittee shall devise and implement additional response steps as expeditiously as practical. Taking such additional response steps shall not be considered a deviation from this permit so long as the Permittee documents such response steps in accordance with this condition.
 - (3) If the Permittee determines that additional response steps would necessitate that the emissions unit or control device be shut down, the IDEM, OAQ shall be promptly notified of the expected date of the shut down, the status of the applicable compliance monitoring parameter with respect to normal, and the results of the actions taken up to the time of notification.
 - (4) Failure to take reasonable response steps shall constitute a violation of the permit.
- (c) The Permittee is not required to take any further response steps for any of the following reasons:
- (1) A false reading occurs due to the malfunction of the monitoring equipment and prompt action was taken to correct the monitoring equipment.

- (2) The Permittee has determined that the compliance monitoring parameters established in the permit conditions are technically inappropriate, has previously submitted a request for a minor permit modification to the permit, and such request has not been denied.
- (3) An automatic measurement was taken when the process was not operating.
- (4) The process has already returned or is returning to operating within "normal" parameters and no response steps are required.
- (d) When implementing reasonable steps in response to a compliance monitoring condition, if the Permittee determines that an exceedance of an emission limitation has occurred, the Permittee shall report such deviations pursuant to Section B-Deviations from Permit Requirements and Conditions.
- (e) The Permittee shall record all instances when response steps are taken. In the event of an emergency, the provisions of 326 IAC 2-7-16 (Emergency Provisions) requiring prompt corrective action to mitigate emissions shall prevail.
- (f) Except as otherwise provided by a rule or provided specifically in Section D, all monitoring as required in Section D shall be performed when the emission unit is operating, except for time necessary to perform quality assurance and maintenance activities.

C.13 Emergency Provisions [326 IAC 2-7-16]

- (a) An emergency, as defined in 326 IAC 2-7-1(12), is not an affirmative defense for an action brought for noncompliance with a federal or state health-based emission limitation.
- (b) An emergency, as defined in 326 IAC 2-7-1(12), constitutes an affirmative defense to an action brought for noncompliance with a technology-based emission limitation if the affirmative defense of an emergency is demonstrated through properly signed, contemporaneous operating logs or other relevant evidence that describe the following:
 - (1) An emergency occurred and the Permittee can, to the extent possible, identify the causes of the emergency;
 - (2) The permitted facility was at the time being properly operated;
 - (3) During the period of an emergency, the Permittee took all reasonable steps to minimize levels of emissions that exceeded the emission standards or other requirements in this permit;
 - (4) For each emergency lasting one (1) hour or more, the Permittee notified IDEM, OAQ and the IDEM Northwest Regional Office within four (4) daytime business hours after the beginning of the emergency, or after the emergency was discovered or reasonably should have been discovered;

Telephone Number: 1-800-451-6027 (ask for Office of Air Quality, Compliance Section), or
Telephone Number: 317-233-5674 (ask for Compliance Section)
Facsimile Number: 317-233-5967
Northwest Regional Office 219 881-6712

- (5) For each emergency lasting one (1) hour or more, the Permittee submitted the attached Emergency Occurrence Report Form or its equivalent, either by mail or facsimile to:

Indiana Department of Environmental Management
Compliance Branch, Office of Air Quality
100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015

within two (2) working days of the time when emission limitations were exceeded due to the emergency.

The notice fulfills the requirement of 326 IAC 2-7-5(3)(C)(ii) and must contain the following:

- (A) A description of the emergency;
- (B) Any steps taken to mitigate the emissions; and
- (C) Corrective actions taken.

The notification which shall be submitted by the Permittee does not require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

- (6) The Permittee immediately took all reasonable steps to correct the emergency.
- (c) In any enforcement proceeding, the Permittee seeking to establish the occurrence of an emergency has the burden of proof.
 - (d) This emergency provision supersedes 326 IAC 1-6 (Malfunctions). This permit condition is in addition to any emergency or upset provision contained in any applicable requirement.
 - (e) IDEM, OAQ may require that the Preventive Maintenance Plans required under 326 IAC 2-7-4-(c)(10) be revised in response to an emergency.
 - (f) Failure to notify IDEM, OAQ by telephone or facsimile of an emergency lasting more than one (1) hour in accordance with (b)(4) and (5) of this condition shall constitute a violation of 326 IAC 2-7 and any other applicable rules.
 - (g) If the emergency situation causes a deviation from a technology-based limit, the Permittee may continue to operate the affected emitting facilities during the emergency provided the Permittee immediately takes all reasonable steps to correct the emergency and minimize emissions.

C.14 Actions Related to Noncompliance Demonstrated by a Stack Test [326 IAC 2-7-5] [326 IAC 2-7-6]

- (a) When the results of a stack test performed in conformance with Section C - Performance Testing, of this permit exceed the level specified in any condition of this permit, the Permittee shall take appropriate response actions. The Permittee shall submit a description of these response actions to IDEM, OAQ, within thirty (30) days of receipt of the test results. The Permittee shall take appropriate action to minimize excess emissions from the affected facility while the response actions are being implemented.

- (b) A retest to demonstrate compliance shall be performed within one hundred twenty (120) days of receipt of the original test results. Should the Permittee demonstrate to IDEM, OAQ that retesting in one-hundred and twenty (120) days is not practicable, IDEM, OAQ may extend the retesting deadline.
- (c) IDEM, OAQ reserves the authority to take any actions allowed under law in response to noncompliant stack tests.

The documents submitted pursuant to this condition do require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

C.15 General Record Keeping Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-6]

- (a) Records of all required data, reports and support information shall be retained for a period of at least five (5) years from the date of monitoring sample, measurement, report, or application. These records shall be kept at the source location for a minimum of three (3) years. The records may be stored elsewhere for the remaining two (2) years as long as they are available upon request. If the Commissioner makes a request for records to the Permittee, the Permittee shall furnish the records to the Commissioner within a reasonable time.
- (b) Unless otherwise specified in this permit, all record Keeping requirements not already legally required shall be implemented within ninety (90) days of permit issuance.

C.16 General Reporting Requirements [326 IAC 2-7-5(3)(C)]

- (a) The reports required by conditions in Section D of this permit shall be submitted to:
- Indiana Department of Environmental Management
Compliance Data Section, Office of Air Quality
100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015
- (b) Unless otherwise specified in this permit, any notice, report, or other submission required by this permit shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ on or before the date it is due.
- (c) Unless otherwise specified in this permit, all reports required in Section D of this permit shall be submitted within thirty (30) days of the end of the reporting period. All reports do require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).
- (d) The first report shall cover the period commencing on the date of issuance of this permit and ending on the last day of the reporting period. Reporting periods are based on calendar years.

Portable Source Requirement

C.17 Relocation of Portable Sources [326 IAC 2-14-4]

- (a) This permit is approved for operation in all areas of Indiana. This determination is based on the requirements of Prevention of Significant Deterioration in 326 IAC 2-2 and 40 CFR 52.21, and Emission Offset requirements in 326 IAC 2-3. A thirty (30) day advance notice of relocation must be given to IDEM, OAQ, and a "Relocation Site Approval" letter must be obtained before relocating. The notification by the Permittee does require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).
- (b) The Permittee shall also notify the applicable local air pollution control agency when relocating to, or from, one the following:
- (1) Madison County - (Anderson Office of Air Management)
 - (2) City of Evansville plus four (4) miles beyond the corporate limits but not outside Vanderburgh County - (Evansville EPA)
 - (3) City of Gary - (Gary Department of Environmental Affairs)
 - (4) City of Hammond - (Hammond Department of Environmental Management)
 - (5) Marion County - (Indianapolis Air Pollution Control Agency)
 - (6) St. Joseph County - (St. Joseph County Health Department)
 - (7) Vigo County - (Vigo County Air Pollution Department)
- (c) That a valid operation permit consists of this document and any subsequent "Relocation Site Approval" letter specifying the current location of the portable plant.

American Excavating, Inc.
Gary, Indiana
Permit Reviewer: CJF/MES

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Source Modification No. 089-18512-05250

SECTION D.1

FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(15)] **Stone and Metal Slag Processing Plant**

- (a) One (1) primary crusher, capacity: 125 tons of stone or metal slag per hour.
- (b) One (1) screening operation, capacity: 125 tons of stone or metal slag per hour.
- (c) One (1) aggregate handling, loading and unloading operation, capacity: 125 tons of stone or metal slag per hour.
- (d) One (1) storage area, capacity: 3,000 tons of stone or metal slag.

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-7-5(1)]

D.1.1 Nonattainment Area Limitations for PM [326 IAC 6-1]

In order to be able to relocate the portable stone and metal slag processing plant to any nonattainment county designated by 326 IAC 6-1-7, the portable plant facilities shall meet the allowable PM emission limitation pursuant to 326 IAC 6-1-2 (a) of 0.03 grains per standard dry cubic feet per minute. However, pursuant to 326 IAC 6-1-2(g), only mineral aggregate operations that are totally enclosed are subject to 326 IAC 6-1-2(a). Since this operation is not totally enclosed and thus it is not practical to measure the grain loading, the operation shall comply with the requirements of 326 IAC 2, 326 IAC 5-1 and 326 IAC 6-4.

D.1.2 Preventive Maintenance Plan [326 IAC 2-7-5(13)]

A Preventive Maintenance Plan, in accordance with Section B - Preventive Maintenance Plan, of this permit, is required for the crushing, for the screening and for the conveying operations.

Compliance Monitoring Requirements [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]

D.1.3 Visible Emissions Notations

- (a) Visible emission notations from the stone and metal slag processing plant shall be performed once per shift during normal daylight operations when exhausting to the atmosphere. A trained employee shall record whether emissions are normal or abnormal.
- (b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.
- (c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.
- (d) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.

American Excavating, Inc.
Gary, Indiana
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Source Modification No. 089-18512-05250

- (e) The Compliance Response Plan for this unit shall contain troubleshooting contingency and response steps for when an abnormal emission is observed.

Record Keeping and Reporting Requirement [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

D.1.4 Record Keeping Requirements

- (a) To document compliance with Condition D.1.3, the Permittee shall maintain records of daily visible emission notations for the crushing, the screening and conveying operations.
- (b) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY**

**PART 70 SOURCE MODIFICATION
CERTIFICATION**

Source Name: American Excavating, Inc.
Source Address: 1 North Broadway, Gary, Indiana 46402
Mailing Address: P.O. Box 374, Enon, Ohio 45323
Source Modification No.: MSM 089-18512-05250

This certification shall be included when submitting monitoring, testing reports/results or other documents as required by this approval.

Please check what document is being certified:

- 9 Test Result (specify)
- 9 Report (specify)
- 9 Notification (specify)
- 9 Affidavit (specify)
- 9 Other (specify)

I certify that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

Signature:

Printed Name:

Title/Position:

Date:

American Excavating, Inc.
P.O. Box 374
Enon, OH 45323

Name (typed or printed)

Indiana Department of Environmental Management Office of Air Quality

Technical Support Document (TSD) for a Part 70 Minor Source Modification

Source Background and Description

Source Name:	American Excavating, Inc.
Source Location:	1 North Broadway, Gary, Indiana 46402
County:	Lake
SIC Code:	1429
Operation Permit No.:	T 089-7663-00121
Operation Permit Issuance Date:	Not yet issued
Minor Source Modification No.:	MSM 089-18512-05250
Permit Reviewer:	Craig J. Friederich

The Office of Air Quality (OAQ) has reviewed a modification application from American Excavating, Inc. relating to the construction and operation of a portable stone and metal slag processing plant consisting of the following emission units and pollution control devices:

- (a) One (1) primary crusher, capacity: 125 tons of stone or metal slag per hour.
- (b) One (1) screening operation, capacity: 125 tons of stone or metal slag per hour.
- (c) One (1) aggregate handling, loading and unloading operation, capacity: 125 tons of stone or metal slag per hour.
- (d) One (1) storage area, capacity: 3,000 tons of stone or metal slag.

History

On February 9, 2004, American Excavating, Inc. submitted an application to the OAQ requesting to construct and operate a portable stone and metal slag processing operation within the boundaries of the U.S. Steel Gary Works steel mill. U.S. Steel Gary Works has applied for a Part 70 permit on December 13, 1996 (T 089-7663-00121).

This proposed stone and metal slag processing plant will replace the current plant operated by Heritage Slag Products, LLC. Heritage is currently operating under significant source modification 089-13821-05210.

This approval is being done as a minor source modification to the not yet issued Part 70 Operating Permit of the US Steel Gary Works source. The source modification will allow American Excavating, Inc. twelve (12) months from the date of issuance to apply for a separate Part 70 Operating Permit for administrative purposes.

Source Definition

This steel mill consists of a source with an on-site contractor:

- (a) U.S. Steel Gary Works, the primary operation, is located at 1 North Broadway, Gary, Indiana 46402 and
- (b) American Excavating, Inc., the supporting operation, is located at 1 North Broadway, Gary, Indiana 46402.

IDEM has determined even though U.S. Steel Gary Works and American Excavating, Inc. are not under the common control of U.S. Steel Gary Works, these two plants are considered one source due to contractual control of the supply of slag and support. U.S. Steel Gary Works and American Excavating, Inc. are considered one source.

Separate Part 70 permits will be issued to U.S. Steel Gary Works and American Excavating, Inc. solely for administrative purposes.

Enforcement Issue

There are no enforcement actions pending.

Stack Summary

There are no stacks associated with any of the facilities being constructed during this modification.

Recommendation

The staff recommends to the Commissioner that the Part 70 Minor Source Modification be approved. This recommendation is based on the following facts and conditions:

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant.

An application for the purposes of this review was received on February 9, 2004.

Emission Calculations

See pages 1 through 8 of 8 Appendix A of this document for detailed emissions calculations.

Potential To Emit of Modification

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as "the maximum capacity of a stationary source to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or type or amount of material combusted, stored, or processed shall be treated as part of its design if the limitation is enforceable by the U.S. EPA."

This table reflects the PTE before controls. Control equipment is not considered federally enforceable until it has been required in a federally enforceable permit.

Pollutant	Potential To Emit (tons/year)
PM	20.8
PM ₁₀	10.2
SO ₂	--
VOC	--
CO	--
NO _x	--

HAPs	Potential To Emit (tons/year)
Total HAPs	--

Justification for Modification

- (a) The Part 70 Operating Permit is being modified through a Part 70 Minor Source Modification to a yet to be issued Part 70 Operating Permit because the potential to emit PM and PM₁₀ before controls of this modification is greater than five (5) tons per year and less than twenty five (25) tons per year. This modification is being performed pursuant to 326 IAC 2-7-10.5(d)(4)(minor).
- (b) Since the Part 70 Operating Permit for this source has not been issued yet, the approval of this Minor Source Modification will allow the source to construct and operate.

County Attainment Status

The source is located in Lake County.

Pollutant	Status
PM ₁₀	attainment
SO ₂	nonattainment
NO ₂	attainment
Ozone	severe nonattainment
CO	attainment
Lead	attainment

- (a) Volatile organic compounds (VOC) are precursors for the formation of ozone. Lake County has been designated as nonattainment for ozone. Therefore, VOC emissions were reviewed pursuant to the requirements for Emission Offset, 326 IAC 2-3.
- (b) Lake County has been classified as nonattainment for SO₂. Therefore, these emissions were reviewed pursuant to the requirements for Emission Offset, 326 IAC 2-3.

- (c) Lake County has been classified as attainment or unclassifiable for all remaining criteria pollutants. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.
- (d) Fugitive Emissions
Since source (U.S. Steel) is one of the 28 listed source categories under 326 IAC 2-2, the fugitive PM emissions are counted toward determination of PSD and Emission Offset applicability.

Source Status

Existing Source PSD or Emission Offset Definition (emissions after controls, based upon 8760 hours of operation per year at rated capacity and/or as otherwise limited):

Pollutant	Emissions (tons/year)
PM	greater than 100
PM ₁₀	greater than 100
SO ₂	greater than 100
VOC	greater than 25
CO	greater than 100
NO _x	greater than 25

This existing source is a major stationary source because a severe nonattainment regulated pollutant is emitted at a rate of twenty-five (25) tons per year or more, a nonattainment regulated pollutant is emitted at a rate of one hundred (100) tons per year or more and it is one of the 28 listed source categories.

These emissions are based upon the technical support document for source modification 089-15121-00121 issued to US Steel - Gary Works.

Potential to Emit of Modification After Issuance

The table below summarizes the potential to emit, reflecting all limits, of the significant emission units after controls. The control equipment is considered federally enforceable only after issuance of this Part 70 source modification.

Pollutant	PM (tons/yr)	PM ₁₀ (tons/yr)	SO ₂ (tons/yr)	VOC (tons/yr)	CO (tons/yr)	NO _x (tons/yr)
Proposed Modification	10.1	4.92	--	--	--	--
Contemporaneous Increases	--	--	--	--	--	--

Contemporaneous Decreases	--	--	--	--	--	--
Net Emissions	10.1	4.92	--	--	--	--
Offset Significant Level	25	15	40	40	100	40

This modification to an existing major stationary source is not major because the emissions increases are less than the PSD significant levels. Therefore, pursuant to 326 IAC 2-2, the Prevention of Significant Deterioration requirements do not apply.

Portable Source

(a) Initial Location

American Excavating, Inc. is a portable source and its initial location is 1 North Broadway, Gary, Indiana 46402.

(b) PSD and Emission Offset Requirements

The emissions from this portable source were reviewed under the requirements of the Prevention of Significant Deterioration (PSD), 326 IAC 2-2, and Emission Offset, 326 IAC 2-3.

(c) Fugitive Emissions

Since this source (U.S. Steel) is one of the twenty-eight (28) listed sources under 326 IAC 2-2, the fugitive particulate matter (PM) and volatile organic compound (VOC) emissions are counted toward determination of PSD and Emission Offset applicability.

Part 70 Permit Determination

326 IAC 2-7 (Part 70 Permit Program)

U.S. Steel has submitted their Part 70 (T 089-7663-00121) application for a Part 70 Operating permit on December 13, 1996. American Excavating, Inc. shall submit a Part 70 Operating permit application within twelve (12) months of issuance of this proposed source modification.

Federal Rule Applicability

- (a) This crushing and screening of stone and metal slag is not subject to the requirements of the New Source Performance Standard, 326 IAC 12, 40 CFR 60.670 through 60.676, Subpart OOO (Standards of Performance for Nonmetallic Mineral Processing Plants) since this stone and metal slag plant is a portable source and has a capacity of less than one hundred fifty (150) tons per hour.
- (b) This crushing and screening operation of slag is not subject to the requirements of the New Source Performance Standard, 326 IAC 12, 40 CFR 60.380 through 60.686, Subpart LL (Standards of Performance for Metallic Mineral Processing Plants) since the operations are not producing metallic mineral concentrates from ore. None of these slag crushing and/or screening operations are performed in a mine or pit.

- (c) There are no National Emission Standards for Hazardous Air Pollutants (NESHAPs)(326 IAC 14 and 40 CFR Part 63) applicable to this proposed modification.

State Rule Applicability - Entire source

326 IAC 2-2 (Prevention of Significant Deterioration (PSD))

This modification to an existing major stationary source is not major because the emissions increases are less than the PSD significant levels. Therefore, pursuant to 326 IAC 2-2, the PSD requirements do not apply.

326 IAC 5-1 (Opacity Emissions Limitations)

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary alternative opacity limitations), opacity emissions shall meet the following, unless otherwise stated in this permit:

- (a) Opacity shall not exceed an average of twenty percent (20%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
- (b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

326 IAC 6-4 (Fugitive Dust Emissions Limitations)

This rule requires that the source not generate fugitive dust to the extent that some portion of the material escapes beyond the property line or boundaries of the property, right-of-way, or easement on which the source is located.

326 IAC 6-5 (Fugitive Particulate Matter Emission Limitations)

Pursuant to 326 IAC 6-5 (Fugitive Particulate Matter Emissions Limitations), fugitive particulate matter emissions except when located in Lake County shall be controlled according to the plan submitted on February 9, 2004. This plan consists of applying water on an as-needed basis to the crushing, screening and storage operations.

State Rule Applicability - Individual Facilities

326 IAC 6-1 (Nonattainment Area Limitations)

In order to be able to relocate the portable stone and metal slag processing plant to any nonattainment county designated by 326 IAC 6-1-7, the portable plant facilities shall meet the allowable PM emission limitation pursuant to 326 IAC 6-1-2 (a) of 0.03 grains per standard dry cubic feet per minute. However, pursuant to 326 IAC 6-1-2(g), only mineral aggregate operations that are totally enclosed are subject to 326 IAC 6-1-2(a). Since this operation is not totally enclosed and thus it is not practical to measure the grain loading, the operation shall comply with the requirements of 326 IAC 2, 326 IAC 5-1 and 326 IAC 6-4.

326 IAC 6-1-10.1 (Nonattainment area particulate limitations: Lake County PM₁₀ emission requirements)

Although U.S. Steel Gary Works is a listed source in 326 IAC 6-1-10.1(d) none of the facilities associated with the American Excavating, Inc. operations are specifically cited, therefore this rule does not apply to the American Excavating, Inc. facilities.

326 IAC 6-1-11.1 (Lake County Fugitive Particulate Matter Control Requirements)

The source will be in violation of 326 IAC 6-1-11.1 (Lake County Fugitive Particulate Matter Control Requirements), if the opacity of fugitive particulate emissions exceeds ten percent (10%). Compliance with this opacity limit shall be achieved by controlling fugitive particulate matter emissions according to the plan submitted on February 9, 2004.

Compliance Requirements

Permits issued under 326 IAC 2-7 are required to ensure that sources can demonstrate compliance with applicable state and federal rules on a more or less continuous basis. All state and federal rules contain compliance provisions, however, these provisions do not always fulfill the requirement for a more or less continuous demonstration. When this occurs IDEM, OAQ, in conjunction with the source, must develop specific conditions to satisfy 326 IAC 2-7-5. As a result, compliance requirements are divided into two sections: Compliance Determination Requirements and Compliance Monitoring Requirements.

Compliance Determination Requirements in Section D of the permit are those conditions that are found more or less directly within state and federal rules and the violation of which serves as grounds for enforcement action. If these conditions are not sufficient to demonstrate continuous compliance, they will be supplemented with Compliance Monitoring Requirements, also Section D of the permit. Unlike Compliance Determination Requirements, failure to meet Compliance Monitoring conditions would serve as a trigger for corrective actions and not grounds for enforcement action. However, a violation in relation to a compliance monitoring condition will arise through a source's failure to take the appropriate corrective actions within a specific time period.

The compliance monitoring requirements applicable to this modification are as follows:

The portable stone and metal slag processing plant has applicable compliance monitoring conditions as specified below:

Visible emissions notations of the particulate matter emissions from the stone and metal slag processing plant shall be performed once per shift during normal daylight operations. A trained employee will record whether emissions are normal or abnormal. For processes operated continuously "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time. In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions. A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process. The Compliance Response Plan for this unit shall contain troubleshooting contingency and response steps for when an abnormal emission is observed.

These monitoring conditions are necessary ensure compliance with 326 IAC 5-1, 326 IAC 6-1, 326 IAC 6-4 and 326 IAC 2-7 (Part 70).

Conclusion

The construction and operation of this stone and metal slag processing plant shall be subject to the

conditions of the attached proposed Minor Source Modification No. 089-18512-05250.

Company Name: American Excavating, Inc.
Address City IN Zip: 1 North Broadway Gary, Indiana 46402
MSM Number: 089-18512
Plant ID: 089-05250
Reviewer: Craig J. Friederich
Date: February 9, 2004

**** PM emissions before controls ****

(TSP)

Storage						0.17 tons/yr	AP-42 Ch.11.2.3 (Fourth edition, no update)
Transporting						0.00 tons/yr	AP-42 Ch.13.2.2 (12/2003)
Loading & Unloading	125 ton/hr x	0.0054 lb/ton	/ 2000 lb/ton x	8760 hr/yr =	2.98 tons/yr		AP-42 Ch.13.2.4 (Fifth edition, 1/95) calculated
Crushing (primary)	125 ton/hr x	0.0007 lb/ton	/ 2000 lb/ton x	8760 hr/yr =	0.383 tons/yr		AP-42 Ch.11.19.2 (Fifth edition, 1/95)
Crushing (secondary)*	0 ton/hr x	0.00504 lb/ton	/ 2000 lb/ton x	8760 hr/yr =	0.00 tons/yr		AP-42 Ch.11.19.2 (Fifth edition, 1/95)
Crushing (tertiary)*	0 ton/hr x	0.00504 lb/ton	/ 2000 lb/ton x	8760 hr/yr =	0.00 tons/yr		AP-42 Ch.11.19.2 (Fifth edition, 1/95)
Screening*	125 ton/hr x	0.0315 lb/ton	/ 2000 lb/ton x	8760 hr/yr =	17.25 tons/yr		AP-42 Ch.11.19.2 (Fifth edition, 1/95)
Conveyor Transfer*	0 ton/hr x	0.00294 lb/ton	/ 2000 lb/ton x	8760 hr/yr =	0.00 tons/yr		AP-42 Ch.11.19.2 (Fifth edition, 1/95)
Total emissions before controls:					20.8 tons/yr		

**** emissions after controls ****

Storage	0.17 tons/yr x	40% emitted after controls =	0.07 tons/yr
Transporting	0.00 tons/yr x	50% emitted after controls =	0.00 tons/yr
Loading & Unloading	2.98 tons/yr x	100% emitted after controls =	2.98 tons/yr
Crushing (primary)	0.38 tons/yr x	40% emitted after controls =	0.15 tons/yr
Crushing (secondary)	0.00 tons/yr x	10% emitted after controls =	0.00 tons/yr
Crushing (tertiary)	0.00 tons/yr x	10% emitted after controls =	0.00 tons/yr
Screening	17.25 tons/yr x	40% emitted after controls =	6.90 tons/yr
Conveying	0.00 tons/yr x	10% emitted after controls =	0.00 tons/yr
Total emissions after controls:			10.1 tons/yr

American Excavating, Inc.
1 North Broadway Gary, Indiana 46402

** fugitive vs. nonfugitive **

Storage	0.17 tons/yr x	40% emitted after controls =	0.07 tons/yr
Transporting	0.00 tons/yr x	50% emitted after controls =	0.00 tons/yr
Loading / Unloading	2.98 tons/yr x	100% emitted after controls =	2.98 tons/yr
Total fugitive emissions:			3.05 tons/yr
Crushing (primary)	0.38 tons/yr x	40% emitted after controls =	0.15 tons/yr
Crushing (secondary)	0.00 tons/yr x	10% emitted after controls =	0.00 tons/yr
Crushing (tertiary)	0.00 tons/yr x	10% emitted after controls =	0.00 tons/yr
Screening	17.25 tons/yr x	40% emitted after controls =	6.90 tons/yr
Conveying:	0.00 tons/yr x	10% emitted after controls =	0.00 tons/yr
Total nonfugitive emissions:			7.05 tons/yr

** storage **

Storage emissions, which result from wind erosion, are determined by the following calculations:

$$E_f = 1.7 \cdot (s/1.5) \cdot (365-p)/235 \cdot (f/15)$$

$$= 8.45 \text{ lb/acre/day}$$

where s = 7.3 % silt content of material

p = 125 days of rain greater than or equal to 0.01 inches

f = 15 % of wind greater than or equal to 12 mph

$$E_p (\text{storage}) = E_f \cdot sc \cdot (40 \text{ cuft/ton}) / (2000 \text{ lb/ton}) / (43560 \text{ sqft/acre}) / (25 \text{ ft}) \cdot (365 \text{ day/yr})$$

$$= 0.170 \text{ tons/yr}$$

where sc = 3 ,000 tons storage capacity

American Excavating, Inc.
1 North Broadway Gary, Indiana 46402

* * unpaved roads * *

The following calculations determine the amount of emissions created by unpaved roads, based on 8,760 hours of use and AP-42, Ch 13.2.2 (12/2003).

$$\begin{aligned} & 0 \text{ trip/hr} \times \\ & 0 \text{ mile/trip} \times \\ & 2 \text{ (round trip) } \times \\ 8760 \text{ hr/yr} = & \quad \quad \quad 0 \text{ miles per year} \end{aligned}$$

Method 1a:

$$E_f = k \left[\left(\frac{s}{12} \right)^{0.9} \right] \left[\left(\frac{W}{3} \right)^b \right]$$

= 2.06 lb/mile

where k = 1.5 (particle size multiplier for F (k=4.9 for PM-30 or TSP))

s = 4.8 mean % silt content of unpaved roads

b = 0.45 Constant for PM-10 and PM-30 or TSP

W = 38 tons average vehicle weight

M = 0.2 surface material moisture content, % (default is 0.2 for dry)

$$E = \frac{2.06 \text{ lb/mi} \times 0 \text{ mi/yr}}{2000 \text{ lb/ton}} = 0.00 \text{ tons/yr}$$

Taking natural mitigation due to precipitation into consideration:

$$E_{\text{ext}} = E \cdot [(365-p)/365] = 0.00 \text{ tons/yr}$$

where p = 125 days of rain greater than or equal to 0.01 inches (see Fig. 13.2.2-1)

Method 1b:

$$E_f = \left[k \left\{ \left(\frac{s}{12} \right)^{1.1} \right\} \left\{ \left(\frac{S}{30} \right)^d \right\} \left\{ \left(\frac{M}{0.5} \right)^c \right\} \right] - C$$

= 0.93 lb/mile

where k = 1.8 (particle size multiplier for F (k=6.0 for PM-30 or TSP))

s = 4.8 mean % silt content of unpaved roads

c = 0.2 Constant for PM-10 (c = 0.3 for PM-30 or TSP)

d = 0.5 Constant for PM-10 (d = 0.3 for PM-30 or TSP)

S = 35 Mean vehicle speed (mph)

M = 0.2 Surface material moisture content, % (default is 0.2 for dry)

C = 0.00047 PM-10 emission factor for 1980's vehicle fleet exhaust, brake wear and tire wear (C = 0.00047 for PM-30)

$$E = \frac{0.93 \text{ lb/mi} \times 0 \text{ mi/yr}}{2000 \text{ lb/ton}} = 0.00 \text{ tons/yr}$$

Taking natural mitigation due to precipitation into consideration:

$$E_{\text{ext}} = E \cdot [(365-p)/365] = 0.00 \text{ tons/yr}$$

where p = 125 days of rain greater than or equal to 0.01 inches (see Fig. 13.2.2-1)

American Excavating, Inc.
1 North Broadway Gary, Indiana 46402

The following calculations determine the amount of emissions created by truck loading and unloading of aggregate, based on 8760 hours of use and AP-42, Ch 13.2.4 (Fifth edition, 1/95).

$$Ef = k(0.0032)^* (U/5)^{1.3}/(M/2)^{1.4}$$

$$= 0.0054 \text{ lb/ton}$$

where k = 0.74 (particle size multiplier)

U = 10 mile/hr mean wind speed

M = 2.1 % material moisture content

Appendix A: Emission Calculations
Stone and Metal Slag Processing

Company Name: American Excavating, Inc.
Address City IN Zip: 1 North Broadway Gary, Indiana 46402
MSM Number: 089-18512
Plant ID: 089-05250
Reviewer: Craig J. Friederich
Date: February 9, 2004

**** PM-10 emissions before controls ****

(TSP)

Storage	** see page 2 **				0.17 tons/yr	AP-42 Ch.11.2.3 (Fourth edition, no update)
Transporting	** see page 3 **				0.00 tons/yr	AP-42 Ch.13.2.2 (12/2003)
Loading & Unloading	125 ton/hr x	0.0026 lb/ton	/ 2000 lb/ton x	8760 hr/yr =	1.41 tons/yr	AP-42 Ch.13.2.4 (Fifth edition, 1/95) calculated
Crushing (primary)	125 ton/hr x	0.0007 lb/ton	/ 2000 lb/ton x	8760 hr/yr =	0.383 tons/yr	AP-42 Ch.11.19.2 (Fifth edition, 1/95)
Crushing (secondary)*	0 ton/hr x	0.00504 lb/ton	/ 2000 lb/ton x	8760 hr/yr =	0.00 tons/yr	AP-42 Ch.11.19.2 (Fifth edition, 1/95)
Crushing (tertiary)*	0 ton/hr x	0.00504 lb/ton	/ 2000 lb/ton x	8760 hr/yr =	0.00 tons/yr	AP-42 Ch.11.19.2 (Fifth edition, 1/95)
Screening*	125 ton/hr x	0.015 lb/ton	/ 2000 lb/ton x	8760 hr/yr =	8.21 tons/yr	AP-42 Ch.11.19.2 (Fifth edition, 1/95)
Conveyor Transfer*	0 ton/hr x	0.00294 lb/ton	/ 2000 lb/ton x	8760 hr/yr =	0.00 tons/yr	AP-42 Ch.11.19.2 (Fifth edition, 1/95)
Total emissions before controls:					10.2 tons/yr	

**** emissions after controls ****

Storage	0.17 tons/yr x	40% emitted after controls =	0.07 tons/yr
Transporting	0.00 tons/yr x	50% emitted after controls =	0.00 tons/yr
Loading & Unloading	1.41 tons/yr x	100% emitted after controls =	1.41 tons/yr
Crushing (primary)	0.38 tons/yr x	40% emitted after controls =	0.15 tons/yr
Crushing (secondary)	0.00 tons/yr x	10% emitted after controls =	0.00 tons/yr
Crushing (tertiary)	0.00 tons/yr x	10% emitted after controls =	0.00 tons/yr
Screening	8.21 tons/yr x	40% emitted after controls =	3.29 tons/yr
Conveying	0.00 tons/yr x	10% emitted after controls =	0.00 tons/yr
Total emissions after controls:			4.92 tons/yr

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** fugitive vs. nonfugitive **

Storage	0.17 tons/yr x	40% emitted after controls =	0.07 tons/yr
Transporting	0.00 tons/yr x	50% emitted after controls =	0.00 tons/yr
Loading / Unloading	1.41 tons/yr x	100% emitted after controls =	1.41 tons/yr
Total fugitive emissions:			1.48 tons/yr
Crushing (primary)	0.38 tons/yr x	40% emitted after controls =	0.15 tons/yr
Crushing (secondary)	0.00 tons/yr x	10% emitted after controls =	0.00 tons/yr
Crushing (tertiary)	0.00 tons/yr x	10% emitted after controls =	0.00 tons/yr
Screening	8.21 tons/yr x	40% emitted after controls =	3.29 tons/yr
Conveying:	0.00 tons/yr x	10% emitted after controls =	0.00 tons/yr
Total nonfugitive emissions:			3.44 tons/yr

** storage **

Storage emissions, which result from wind erosion, are determined by the following calculations:

$$E_f = 1.7 \cdot (s/1.5) \cdot (365-p)/235 \cdot (f/15)$$

$$= 8.45 \text{ lb/acre/day}$$

$$\text{where } s = 7.3 \text{ \% silt content of material}$$

$$p = 125 \text{ days of rain greater than or equal to 0.01 inches}$$

$$f = 15 \text{ \% of wind greater than or equal to 12 mph}$$

$$E_p (\text{storage}) = E_f \cdot sc \cdot (40 \text{ cuft/ton}) / (2000 \text{ lb/ton}) / (43560 \text{ sqft/acre}) / (25 \text{ ft}) \cdot (365 \text{ day/yr})$$

$$= 0.170 \text{ tons/yr}$$

$$\text{where } sc = 3,000 \text{ tons storage capacity}$$

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* * unpaved roads * *

The following calculations determine the amount of emissions created by unpaved roads, based on 8,760 hours of use and AP-42, Ch 13.2.2 (12/2003).

$$\begin{aligned} & 0 \text{ trip/hr} \times \\ & 0 \text{ mile/trip} \times \\ & 2 \text{ (round trip) } \times \\ 8760 \text{ hr/yr} = & \quad \quad \quad 0 \text{ miles per year} \end{aligned}$$

Method 1a:

$$E_f = k \left[\left(\frac{s}{12} \right)^{0.9} \right] \left[\left(\frac{W}{3} \right)^b \right]$$

= 2.06 lb/mile

where k = 1.5 (particle size multiplier for F (k=4.9 for PM-30 or TSP))

s = 4.8 mean % silt content of unpaved roads

b = 0.45 Constant for PM-10 and PM-30 or TSP

W = 38 tons average vehicle weight

M = 0.2 surface material moisture content, % (default is 0.2 for dry)

$$E = \frac{2.06 \text{ lb/mi} \times 0 \text{ mi/yr}}{2000 \text{ lb/ton}} = 0.00 \text{ tons/yr}$$

Taking natural mitigation due to precipitation into consideration:

$$E_{\text{ext}} = E \cdot [(365-p)/365] = 0.00 \text{ tons/yr}$$

where p = 125 days of rain greater than or equal to 0.01 inches (see Fig. 13.2.2-1)

Method 1b:

$$E_f = \left[k \left\{ \left(\frac{s}{12} \right)^{1.1} \right\} \left\{ \left(\frac{S}{30} \right)^d \right\} \left\{ \left(\frac{M}{0.5} \right)^c \right\} \right] - C$$

= 0.93 lb/mile

where k = 1.8 (particle size multiplier for F (k=6.0 for PM-30 or TSP))

s = 4.8 mean % silt content of unpaved roads

c = 0.2 Constant for PM-10 (c = 0.3 for PM-30 or TSP)

d = 0.5 Constant for PM-10 (d = 0.3 for PM-30 or TSP)

S = 35 Mean vehicle speed (mph)

M = 0.2 Surface material moisture content, % (default is 0.2 for dry)

C = 0.00047 PM-10 emission factor for 1980's vehicle fleet exhaust, brake wear and tire wear (C = 0.00047 for PM-30)

$$E = \frac{0.93 \text{ lb/mi} \times 0 \text{ mi/yr}}{2000 \text{ lb/ton}} = 0.00 \text{ tons/yr}$$

Taking natural mitigation due to precipitation into consideration:

$$E_{\text{ext}} = E \cdot [(365-p)/365] = 0.00 \text{ tons/yr}$$

where p = 125 days of rain greater than or equal to 0.01 inches (see Fig. 13.2.2-1)

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The following calculations determine the amount of emissions created by truck loading and unloading of aggregate, based on 8760 hours of use and AP-42, Ch 13.2.4 (Fifth edition, 1/95).

$$Ef = k(0.0032)^* (U/5)^{1.3}/(M/2)^{1.4}$$

$$= 0.0026 \text{ lb/ton}$$

where k = 0.35 (particle size multiplier)

U = 10 mile/hr mean wind speed

M = 2.1 % material moisture content